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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/010,919	12/07/2001	Timothy M. Gage	M-11998 US	6158

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EXAMINER	
AILES, BENJAMIN A	

ART UNIT	PAPER NUMBER
2142	

DATE MAILED: 10/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/010,919	GAGE ET AL.	
	Examiner	Art Unit	
	Benjamin A. Ailes	2142	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 July 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19 and 21-65* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19 and 21-65* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This action is in response to correspondence filed 13 July 2006.

2. Claims 1-19 and 21-65 remain pending.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-15, 21-65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogier (US 7,031,288 B2) in view of Perlman et al. (US 5,805,818), hereinafter referred to as Perlman.

6. Regarding claims 1, 21, 36 and 51, Ogier teaches the establishment of bi-directional connectivity being accomplished between two nodes when it is determined that two nodes can send packets back and forth reliably (column 5, ll. 3-7). Ogier

teaches the use of HELLO messages to transmit node information sent which updates neighbors and performs neighbor discovery and these HELLO messages are received at neighbor nodes (col. 9, ll. 1-2, col. 28, ll. 29-35 and ll. 52-56 and Figure 14). This step of transmitting HELLO messages is deemed functionally equivalent to the claimed step of "receiving a first unreliable packet from said network element" because as defined by claim 2, an unreliable packet is one that does not require a response and Ogier's use of HELLO messages fall within the scope of the applicant's invention because the HELLO messages utilized do not require a response. Once a HELLO message is received at a network node, the node stores information related to the possible neighbor nodes (col. 9, ll. 53-60) which teaches on the "storing an address of said network element in a neighbor pending list, in response to receiving the first unreliable packet". Ogier teaches on the use of "neighbor ack" and "ack" messages in order to acknowledge neighbor nodes and establish "link-level" acknowledgements (col. 9, ll. 5-9) but does not explicitly teach the "sending a reliable packet to said network element; and if an acknowledgement to said reliable packet is received from said network element, accepting said network element as a neighbor" as required in order to establish the "bi-directional connectivity" between two neighbor nodes. However, in related art, Perlman teaches on these limitations. Perlman teaches on the requirement for neighbor nodes to send messages of affirmation in order to maintain their status as an "alive" neighbor node. As defined by the applicant, a "reliable packet" is a packet that requires a response. Perlman teaches on this aspect by teaching the method of sending a data packet which requires an acknowledgement in order to confirm the link

as being "up" (column 8, ll. 18-25). Once a neighbor responds by acknowledgement, the neighbor is considered confirmed which teaches on the aspect of "if an acknowledgement to said reliable packet is received from said network element, accepting said network element as a neighbor". Based on the written disclosure, it is unclear what criteria is deemed necessary for "accepting" a network element as a neighbor, in other words, independent claim 1 lacks guidance as to what it means to be "accepted" as a neighbor because no functional step is performed currently within independent claim 1 when a neighbor node is "accepted". It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to combine the neighbor node acknowledgement method as taught by Perlman with the neighbor discovery method taught by Ogier. One of ordinary skill in the art would have been motivated to make such a combination as suggested by Ogier where it is necessary for bi-directional links to be maintained by being able to send information back forth between nodes reliably (column 5, ll. 3-11) and by Perlman wherein it is suggested to affirm neighbor nodes quickly and efficiently (column 3, ll. 55-59).

7. Regarding claims 2, 22, 37 and 52, Ogier and Perlman teach the method wherein said unreliable packet does not require a response (Ogier, , col. 28, ll. 29-35 and ll. 52-56). The rationale and motivation used to combine Ogier and Perlman utilized in the rejection of claims 1, 21, 36 and 51 equally applies to claims 2, 22, 37 and 52.

8. Regarding claims 3, 23, 38 and 53, Ogier and Perlman teach the method wherein said reliable packet requires a response (Perlman, col. 3, ll. 55-59). The rationale and

motivation used to combine Ogier and Perlman utilized in the rejection of claims 1, 21, 36 and 51 equally applies to claims 3, 23, 38 and 53.

9. Regarding claims 4, 24, 39 and 54, Ogier and Perlman teach the method wherein said accepting said network element as neighbor is done by moving said address of said network element from said neighbor pending list to a neighbor list (Ogier, col. 29, ll. 46-53). The rationale and motivation used to combine Ogier and Perlman utilized in the rejection of claims 1, 21, 36 and 51 equally applies to claims 4, 24, 39 and 54.

10. Regarding claims 5, 25, 40, and 55, Ogier and Perlman teach the method further comprising if said address of said network element is in said neighbor list, updating a neighbor hold count for said network element (Ogier, col. 29, ll. 54-59). The rationale and motivation used to combine Ogier and Perlman utilized in the rejection of claims 1, 21, 36 and 51 equally applies to claims 5, 25, 40, and 55.

11. Regarding claims 6, 26, 41 and 56, Ogier and Perlman teach the method further comprising determining if said address of said network element is in a dampening list (Ogier, col. 29, ll. 39-45). The rationale and motivation used to combine Ogier and Perlman utilized in the rejection of claims 1, 21, 36 and 51 equally applies to claims 6, 26, 41 and 56.

12. Regarding claims 7, 27, 42 and 57, Ogier and Perlman teach the method further comprising if said address of said network element is in said dampening list, updating a value of a reliability count of said network element to reflect higher reliability of said network element (Ogier, col. 29, ll. 39-45). The rationale and motivation used to

combine Ogier and Perlman utilized in the rejection of claims 1, 21, 36 and 51 equally applies to claims 7, 27, 42 and 57.

13. Regarding claims 8, 28, 43, and 58, Ogier and Perlman teach the method further comprising if said value of said reliability count is a maximum value, updating a value of a reliability count of said network element to reflect higher reliability of said network element (Ogier, col. 29, ll. 39-45). The rationale and motivation used to combine Ogier and Perlman utilized in the rejection of claims 1, 21, 36 and 51 equally applies to claims 8, 28, 43, and 58.

14. Regarding claims 9, 29, 44, and 59, Ogier and Perlman the method wherein said maximum value is predetermined (Ogier, col. 27, ll. 44-50). The rationale and motivation used to combine Ogier and Perlman utilized in the rejection of claims 1, 21, 36 and 51 equally applies to claims 9, 29, 44, and 59.

15. Regarding claims 10, 30, 45 and 60, Ogier and Perlman teach the method wherein said maximum value is dynamically adjusted according to a traffic condition in said network (Ogier, col. 28, ll. 19-26). The rationale and motivation used to combine Ogier and Perlman utilized in the rejection of claims 1, 21, 36 and 51 equally applies to claims 10, 30, 45 and 60.

16. Regarding claims 11, 31, 46 and 61, Ogier and Perlman teach the method further comprising if said network element is not in said dampening list, adding said address of said network element to said dampening list, and setting said value of said reliability count of said network element to said maximum value (Ogier, col. 29, ll. 39-45). The

rationale and motivation used to combine Ogier and Perlman utilized in the rejection of claims 1, 21, 36 and 51 equally applies to claims 11, 31, 46 and 61.

17. Regarding claims 12, 32, 47 and 62, Ogier and Perlman teach the method further comprising setting said neighbor hold count for said network element (Ogier, col. 29, ll. 39-45); and sending a second unreliable packet to said network element (Ogier, col. 28, ll. 19-26). The rationale and motivation used to combine Ogier and Perlman utilized in the rejection of claims 1, 21, 36 and 51 equally applies to claims 12, 32, 47 and 62.

18. Regarding claims 13, 33, 48 and 63, Ogier and Perlman the method further comprising initiating a neighbor pending timer (Ogier, col. 27, ll. 65-67). The rationale and motivation used to combine Ogier and Perlman utilized in the rejection of claims 1, 21, 36 and 51 equally applies to claims 13, 33, 48 and 63.

19. Regarding claims 14, 34, 49 and 64, Ogier and Perlman teach the method further comprising if said acknowledgement to said reliable packet is not received before said neighbor pending timer expires, removing said address of said network element from said neighbor pending list, and updating said value of said reliability count to reflect lower reliability of said network element (Ogier, col. 29, ll. 2-7). The rationale and motivation used to combine Ogier and Perlman utilized in the rejection of claims 1, 21, 36 and 51 equally applies to claims 14, 34, 49 and 64.

20. Regarding claims 15, 35, 50 and 65, Ogier and Perlman teach the method further comprising if said acknowledgement to said reliable packet is received before said neighbor pending timer expires (Ogier, col. 29, ll. 2-7), moving said address of said network element from said neighbor pending list to said neighbor list, and (Ogier, col.

29, ll. 46-53), and removing said address of said network element from said dampening list (Ogier, col. 29, ll. 46-53). The rationale and motivation used to combine Ogier and Perlman utilized in the rejection of claims 1, 21, 36 and 51 equally applies to claims 15, 35, 50 and 65.

21. Claims 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogier in view of Perlman and further in view of Saleh et al. (US 6,856,627 B2), hereinafter referred to as Saleh.

22. Regarding claim 16, Ogier, Perlman and Saleh teach a system for establishing bi-directional connectivity with a network element in a network comprising:

a central processing module (Ogier, col. 3, ll 52-60); and

a neighbor pending list coupled to said central processing module, wherein said central processing module is configured to store an address of said network element in said neighbor pending list while said network element is in a process of establishing said bi-directional connectivity with said system (Ogier and Perlman, see rejection of claim 1);

a dampening list coupled to said central processing module, wherein said dampening list is configured to store said address of said network element when a value of a reliability count is lower than a maximum value, and said maximum value is dynamically adjusted according to a traffic condition in said network (see Ogier, col. 29, ll. 39-45, and see Saleh, col. 11, lines 26-60).

The use of a neighbor table is taught by Ogier, the neighbor table includes a "hold time" that counts down how long a neighbor node can be deemed reliable. The

amount of time remaining is deemed functionally equivalent to the claimed "reliability count" and "maximum value" parameters. Ogier teaches the use of the hold count but does not explicitly disclose how the hold count is set or adjusted based on network traffic conditions. However, in related art, Saleh teaches adjacent neighbor nodes monitoring reliability between neighboring nodes by using a quality of service technique of monitoring the interval in seconds between "hello" messages transmitted from neighboring nodes in order to be considered an active node and not be considered a dead or inactive node (see Saleh, col. 11, lines 51-60). Saleh teaches the interval being set by either node and basing the setting on network bandwidth available (network traffic conditions) (see Saleh, col. 11, lines 32-47). It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the teachings of Ogier and Perlman with the teachings of Saleh in order to adjust the interval between status messages from neighboring nodes in order to confirm activeness of the node (i.e. hello transmissions) based on the state of the network being used (network traffic conditions). One of ordinary skill in the art would have been motivated to make this modification to Ogier and Perlman in order to ensure the use of QoS parameters which would assist in ensuring that neighbor nodes are not deemed inactive or unavailable wrongfully (i.e. a condition wherein the neighboring node has no control and the fault is placed on the network).

23. Regarding claim 17, Ogier, Perlman and Saleh teach the system further comprising an input-output module coupled to said central processing module, wherein said input-output module is configured to provide input-output interface to said central

processing module (see Ogier, col. 3, ll. 52-60); and a counter module coupled to said central processing module, wherein said counter module is configured to provide at least one of timing and counting functionality to said central processing module (see Ogier, col. 26, ll. 5-15). The motivation to combine Ogier, Perlman and Saleh utilized in the rejection of claim 16 applies equally as well to claim 17.

24. Regarding claim 18, Ogier and Saleh disclose the system further comprising a neighbor list coupled to said central processing module, wherein said neighbor list is configured to store said address of said network element after said bi-directional connectivity is established with said network element (see Ogier, col. 27, ll. 59-62). The motivation to combine Ogier, Perlman and Saleh utilized in the rejection of claim 16 applies equally as well to claim 18.

25. Regarding claim 19, Ogier, Perlman and Saleh disclose the system wherein said maximum value is predetermined (see Saleh, col. 11, lines 32-47). The motivation to combine Ogier, Perlman and Saleh utilized in the rejection of claim 16 applies equally as well to claim 19.

Response to Arguments

26. Applicant's arguments with respect to claims 1-19 and 21-65 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin A. Ailes whose telephone number is (571)272-3899. The examiner can normally be reached on M-F 6:30-4, IFP Work Schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Caldwell can be reached on (571)272-3868. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

baa

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PRIMARY EXAMINER